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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,575	11/12/2003	Frank L. Hall	4718.1US (00-0316.01/US)	6661
24247	7590	05/31/2006	EXAMINER	
TRASK BRITT			HEINRICH, SAMUEL M	
P.O. BOX 2550			ART UNIT	PAPER NUMBER
SALT LAKE CITY, UT 84110			1725	

DATE MAILED: 05/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,575

Applicant(s)

HALL, FRANK L.

Examiner

Samuel M. Heinrich

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-- The **MAILING DATE** of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 12-23 is/are pending in the application.
4a) Of the above claim(s) 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 18-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03302006</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 18-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 18 requires an interposer located on “the other side of the substrate”, however the specification describes [0037] the interposer is the substrate; “die 20 and a substrate, which is also referred to herein as an interposer.” See Figure 5. An explanation of the originally disclosed ‘wafer and device and resin’ is requested. Claims 19-23 contain the rejected subject matter of claim 18.

Claims 18-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 18 requires an interposer located on “the other side of the substrate”, however the specification describes [0037] the interposer is the substrate; “die 20 and a substrate, which is also referred to herein as an interposer.” See Figure 5. Claims 19-23 contain rejected subject matter of claim 18.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-6 and 18-23 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art (AAPA). The claimed article is a semiconductor comprising a device portion, an interposer portion, and a resist portion. AAPA describes (Background of the Invention, Pages 2-6) well known molding or encapsulation of die and carrier assemblies and describe known mounting arrangements such as printed circuit boards, tape frames, and other carrier substrates. AAPA further describes the "package is then encapsulated for protection from various atmospheric ailments." AAPA narratively describes process features and discloses publications which describe process features. These AAPA descriptions meet the claim limitations because method limitations do not impart patentability to article claims. The method limitations describing "roughened surface formed by a laser" and "resist ... having a portion thereof removed" are process limitations which do not impart patentability to the article claims. Further process and apparatus limitations are recited in the dependent claims and these further limitations do not impart patentability to article claims. The article structure must define over structure from the prior art.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of USPN 6,031,249 to Yamazaki et al in view of US20020070440A1 to Aiba et al and in view of JP11006073A. The claimed article is a semiconductor comprising a device portion, an interposer portion, and a resist portion. Yamazaki et al disclose (Brief Summary Text) "semiconductor ...formed on an insulating substrate such as ...silicon wafer". Aiba et al disclose a semiconductor 11 having both resist and insulating film. JP11006073A discloses simultaneous cutting and roughening with a laser. AAPA describes (Background of the Invention, Pages 2-6) well known molding or encapsulation of die and carrier assemblies and describe known mounting arrangements such as printed circuit boards, tape frames, and other carrier substrates. AAPA further describes the "package is then encapsulated for protection from various atmospheric ailments." During processing disclosed in AAPA, article characteristics such as semiconductor formed on a wafer, laser texturing, and resist location would have been obvious at the time applicant's invention was made to a person having ordinary skill in the art because the article features are known from the prior art. The method limitations describing "roughened surface formed by a laser" and "resist ... having a portion thereof removed" are process limitations which do not impart patentability to the article claims. Further process and

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apparatus limitations are recited in the dependent claims and these further limitations do not impart patentability to article claims. The article structure must define over prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art pertains to devices and device manufacturing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel M. Heinrich whose telephone number is 571-272-1175. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, P. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Samuel M Heinrich
Primary Examiner
Art Unit 1725

SMH